

IN THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in this application.

Listing of claims:

Claims 1-11 (Previously Cancelled).

12. (Previously Added) An isolated DNA consisting essentially of SEQ ID NO:1.

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13. (Currently Amended) An isolated DNA, which hybridizes under stringent conditions to the complement of the DNA of Claim 12, is about 1975 nucleotides, and which encodes a protein with an activity to transfer a galactose residue from a ~~galactose donor~~ donor to a C4 position of a galactose residue in lactosylceramide or galactosylceramide; and wherein the stringent conditions comprise hybridizing in a solution containing 50% formamide, 4 X SSC, 50 mM HEPES (pH 7.0), 10 X Denhardt's solution, and 100 µg/ml salmon sperm DNA at 42°C, and washing in 2 X SSC and 0.1% SDS at room temperature, and washing in 0.1 X SSC and 0.1% SDS at a temperature of 50 °C or less.

14. (Currently Amended) An isolated DNA, which encodes a polypeptide fragment ^{of} ~~with an amino acid sequence in~~ SEQ ID NO:2, with an activity to transfer a galactose residue from a galactose donor to a C4 position of a galactose residue in lactosylceramide or galactosylceramide, and which is about 1975 nucleotides or less in length.

15. (Currently Amended) The DNA of Claim ~~12~~ 14, consisting essentially of nucleotides 269 to 1192 of SEQ ID NO:1.

16. (Currently Amended) The DNA of Claim ~~12~~ 14, consisting essentially of nucleotides 191 to 1192 of SEQ ID NO:1.

17. (Currently Amended) The DNA of Claim ~~12~~ 14, consisting essentially of nucleotides 134 to 1192 of SEQ ID NO:1.

18. (Previously Added) A vector comprising the isolated DNA of Claim 12.

19. (Previously Added) A vector comprising the isolated DNA of Claim 13.

20. (Previously Added) A vector comprising the isolated DNA of Claim 14.

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21. (Previously Added) A vector comprising the isolated DNA of Claim 15.

22. (Previously Added) A vector comprising the isolated DNA of Claim 16.

23. (Previously Added) A vector comprising the isolated DNA of Claim 17.

24. (Previously Added) A cell transformed with the isolated DNA of Claim 12.

25. (Previously Added) A cell transformed with the isolated DNA of Claim 13.

26. (Previously Added) A cell transformed with the isolated DNA of Claim 14.

27. (Previously Added) A cell transformed with the isolated DNA of Claim 15.

28. (Previously Added) A cell transformed with the isolated DNA of Claim 16.

29. (Previously Added) A cell transformed with the isolated DNA of Claim 17.

30. (Previously Added) A method of producing an α 1,4-galactosyltransferase, comprising culturing the cell of Claim 24 in a medium suitable for expressing the α 1,4-galactosyltransferase; and

recovering the α 1,4-galactosyltransferase from one or both of the medium and cell extract of the cell.

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31. (Previously Added) A method of producing an α 1,4-galactosyltransferase, comprising

culturing the cell of Claim 25 in a medium suitable for expressing the α 1,4-galactosyltransferase; and

recovering the α 1,4-galactosyltransferase from one or both of the medium and cell extract of the cell.

32. (Previously Added) A method of producing an α 1,4-galactosyltransferase, comprising

culturing the cell of Claim 26 in a medium suitable for expressing the α 1,4-galactosyltransferase; and

recovering the α 1,4-galactosyltransferase from one or both of the medium and cell extract of the cell.

33. (Previously Added) A method of producing an α 1,4-galactosyltransferase, comprising

culturing the cell of Claim 27 in a medium suitable for expressing the α 1,4-galactosyltransferase; and

recovering the α 1,4-galactosyltransferase from one or both of the medium and cell extract of the cell.

34. (Previously Added) A method of producing an α 1,4-galactosyltransferase, comprising

culturing the cell of Claim 28 in a medium suitable for expressing the α 1,4-galactosyltransferase; and

recovering the α 1,4-galactosyltransferase from one or both of the medium and cell extract of the cell.

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35. (Previously Added) A method of producing an α 1,4-galactosyltransferase, comprising

culturing the cell of Claim 29 in a medium suitable for expressing the α 1,4-galactosyltransferase; and

recovering the α 1,4-galactosyltransferase from one or both of the medium and cell extract of the cell.
